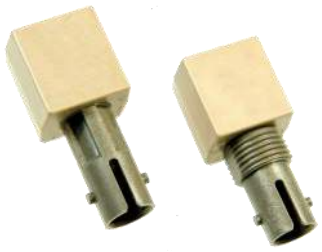
Fiber Optic Receiver

OPF2418, OPF2418T



Features:

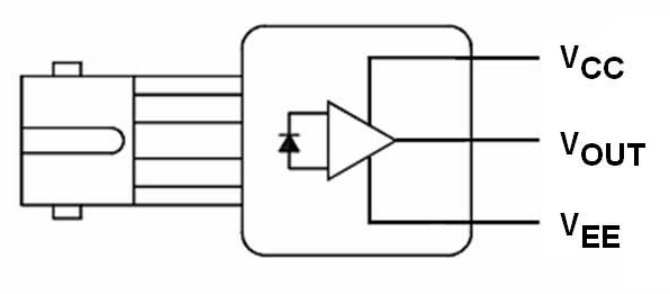
- Up to 194 Mbps operation
- 850nm wavelength
- ST® style port
- Wave solderable
- Wide temperature range

Description:

The OPF2418 family is a low cost solution for high speed fiber optic communications designs. The internal lensing of this receiver's design allows optimal response for fiber sizes of 100µm and below. The receiver is comprised of a high speed, low noise, photodiode coupled to a transimpedance amplifier (TIA). The photodiode/TIA combination produces an output voltage that is proportional to the input light amplitude. This hybrid approach solves many of the problems of high speed data link designs by placing the photodiode close to the TIA. The amplification of the TIA makes the output much less susceptible to EMI. The output of the OPF2418 is an analog, low impedance, emitter follower voltage source. Subsequent circuitry can be utilized to convert the analog voltage to ECL/TTL for digital data rates up to 155 Mbps. The OPF2418 is available with either standard or threaded panel mount ST® receptacles. The threaded version is also available in conductive plastic.

Applications:

- Industrial Ethernet equipment
- Copper-to-fiber media conversion
- Intra-system fiber optic links
- Video surveillance systems



"T" suffix = Threaded ST® package

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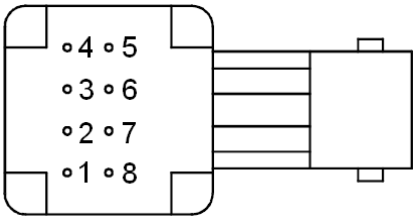

PIN	FUNCTION
1	Not Connected
2	V_{OUT}
3	V_{EE}
4	Not Connected
5	Not Connected
6	V_{CC}
7	V_{EE}
8	Not Connected

Pins 3 & 7 are electrically connected to the header.
Pins 1,4,5 & 8 are mechanically connected together.

RoHS ESD Class 2

ST® is a registered trademark of AT&T.

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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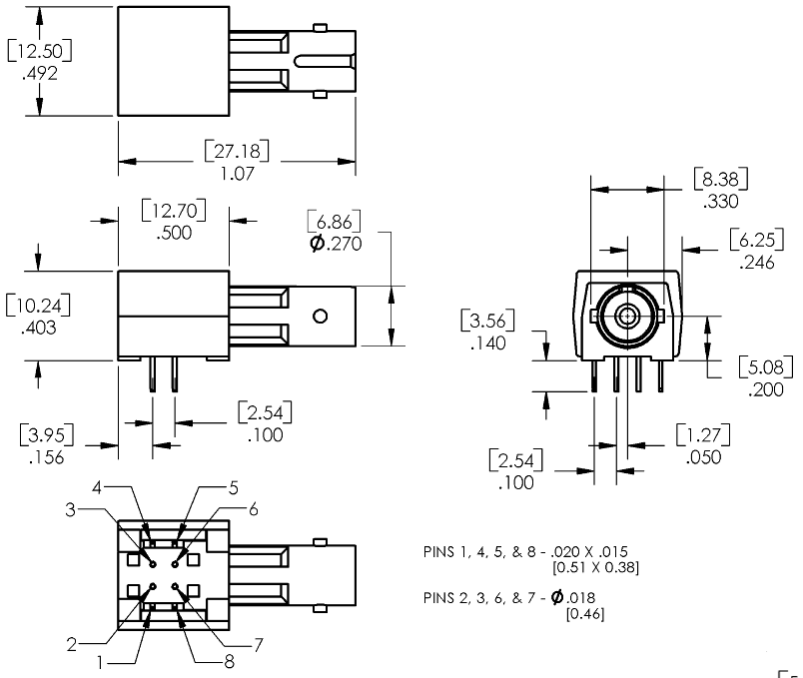
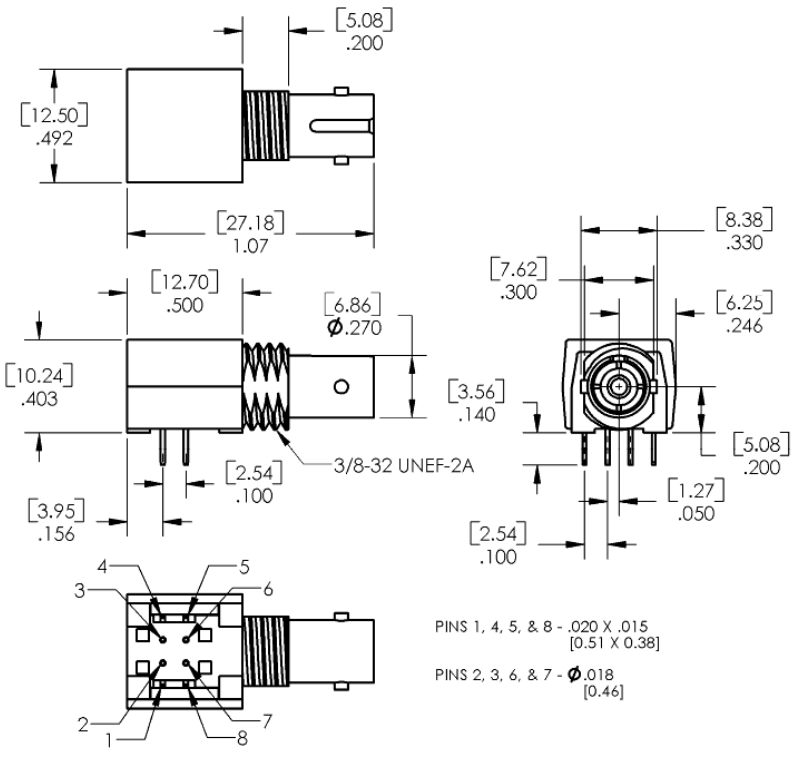
1645 Wallace Drive, Carrollton, TX 75006|Ph: +1 972 323 2200
sensors@ttelectronics.com | www.ttelectronics.com

Mechanical Data



OPF2418

OPF2418T



DIMENSIONS ARE IN: **[MILLIMETERS]**
INCHES

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Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)	
Storage Temperature Range	-55° C to +85° C
Operating Temperature Range	-40° C to +85° C
Lead Soldering Temperature[(1)]	260° C
Supply Voltage	-0.5 V to 6.0 V
Output Current	25 mA
Output Pin Voltage	-0.5 V

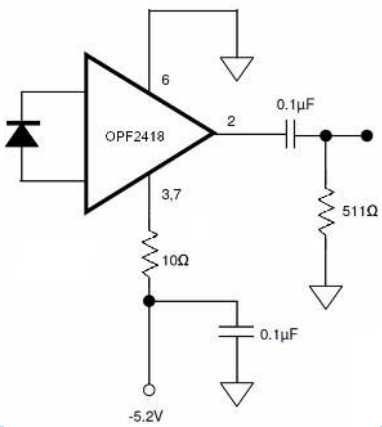
Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
R	Responsivity	5.3	7.0	9.6	mV/µW	λ_p = 850 nm, f = 50 MHz
		4.5		11.5		-40 °C ≤ T_A ≤ +85 °C
V_{NOISE}	RMS Output Noise Voltage		0.40	0.59	mV	75 MHz Bandwidth Filtered, P_R = 0
				0.70		Unfiltered Bandwidth Filtered, P_R = 0
P_N	RMS Equivalent Optical Noise Input Power		0.050	0.065	µW	100 MHz Bandwidth Filtered, P_R = 0
P_R	Peak Received Optical Power			175	µW	40 °C ≤ T_A ≤ +85 °C
				150	µW	
V_{ODC}	DC Output Voltage	-4.2	-3.1	-2.4	V	P_R = 0
I_{EE}	Supply Current		9	15	mA	R_L = ∞
BW	Bandwidth	155	200		MHz	-3dB electrical
t_r, t_f	Rise Time, Fall Time		2.0	2.6	ns	f = 50 MHz, P_R = 100 µW peak, R_L = 511 Ω, C_{LOAD} = 5 pF
PWD	Pulse Width Distortion		0.4	2.5	ns	f = 50 MHz, P_R = 150 µW peak
PSRR	Power Supply Rejection Ratio		20		dB	f = 10 MHz

Notes:

1. Maximum of 5 seconds with soldering iron. Duration can be extended to 10 seconds when flow soldering. RMA flux is recommended.

Application Circuit



Note that the 10W resistor and bypass capacitor are critical.

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